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Docket No.:

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

GROUP: 1713

Juergen KOCH, et al.

SERIAL NO: 10/692,753

EXAMINER: Harlan, R.

FILED: October 27, 2003

FOR: ISODECYL BENZOATE MIXTURES, PREPARATION, AND THEIR USE

DECLARATION UNDER 37 C.F.R. 1.132

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

Sir:

Now comes Michael Graß who deposes and states that:

1. I am a graduate of chemistry and received my doctorate degree in the year 1995.
2. I have been employed by Oxeno Olefinchemie GmbH for 9 years as a Manager in the field of Application Technology of Plasticizers.
3. The following experiments were carried out by me or under my direct supervision and control.
4. Example A:  
The esterification described in Example 2 was repeated using a 98% pure 2-propylheptanol instead of the alcohol mixture used in that example.  
The glass transition temperature ( $T_G$ ) of the corresponding benzoate ester was measured by means of TBA according to Example 7. The  $T_G$  was found to be  $-93^\circ\text{C}$ .
5. Example B:  
A mixture of 17% 2-Isopropyl-5-methyl-hexanol-1, 71% 2-Propyl-5-methylhexanol-1, 4% 2-Isopropyl-heptanol-1 and 7% 2-Propylheptanol was mixed in a mass ratio of 1:1 with the alcohol used in Example A. The resulting mixture consisted of 52% 2-propylheptanol. This

new mixture was used to esterify benzoic acid according to the procedure described in Example 2.

The  $T_G$  of this isodecyl benzoate was  $-91.3^\circ\text{C}$ , which is still superior with regard to the  $T_G$  of the comparative Example 3 (using Exxal 10 as alcohol).

6. Test Report according to DIN EN ISO/IEC 174025 showing that Exxal 10 (iso-Decanol) contains a maximum of 3.6% 2-propyl heptanol.

First, the Exxal 10 sample (see attachment describing Exxal 10) was diluted in methanol 1:10 and then analyzed. After recording the chromatogram a known portion of 2-propylheptanol was added to the sample and analyzed again to clearly identify the peak of 2-propylheptanol. These data are shown in the attached chromatograms.

	Peak with RT of 2-propylheptanol in the sample Exxal 10	Peak with RT of 2-propylheptanol in the sample Exxal 10 added with 2-propylheptanol
Area %	3.6	5.0

The identification of the signal for 2-propylheptanol was done only by comparing retention times. The content of 3.6% therefore is a maximum value. If another component superimposes this signal the real content of 2-propylheptanol would be even lower.

7. The above data were obtained by analyzing an Exxal 10 sample using the following equipment, parameters and method:

**Apparatus:** Gas chromatograph with FID and integrator, e.g. Agilent gas chromatograph 5890 and integrator 3396 of Agilent ChemStation software.

**Column:** fused silica capillary column

**Stationary phase:** polyethylene glycol, e.g. Stabilwax, Restek

**Length:** 60 m

**Internal diameter:** 0.25 mm

**Film Thickness:** 0.25  $\mu\text{m}$

**Carrier gas:** helium

**Column head pressure:** 200 kPa

**Column flow rate:** ca. 2 ml/min

**Split:** ca. 100 ml/min

**Temperatures:**

**Oven temperature:** 60°C - 2°C/min-220°C

**Injector temperature:** 225°C

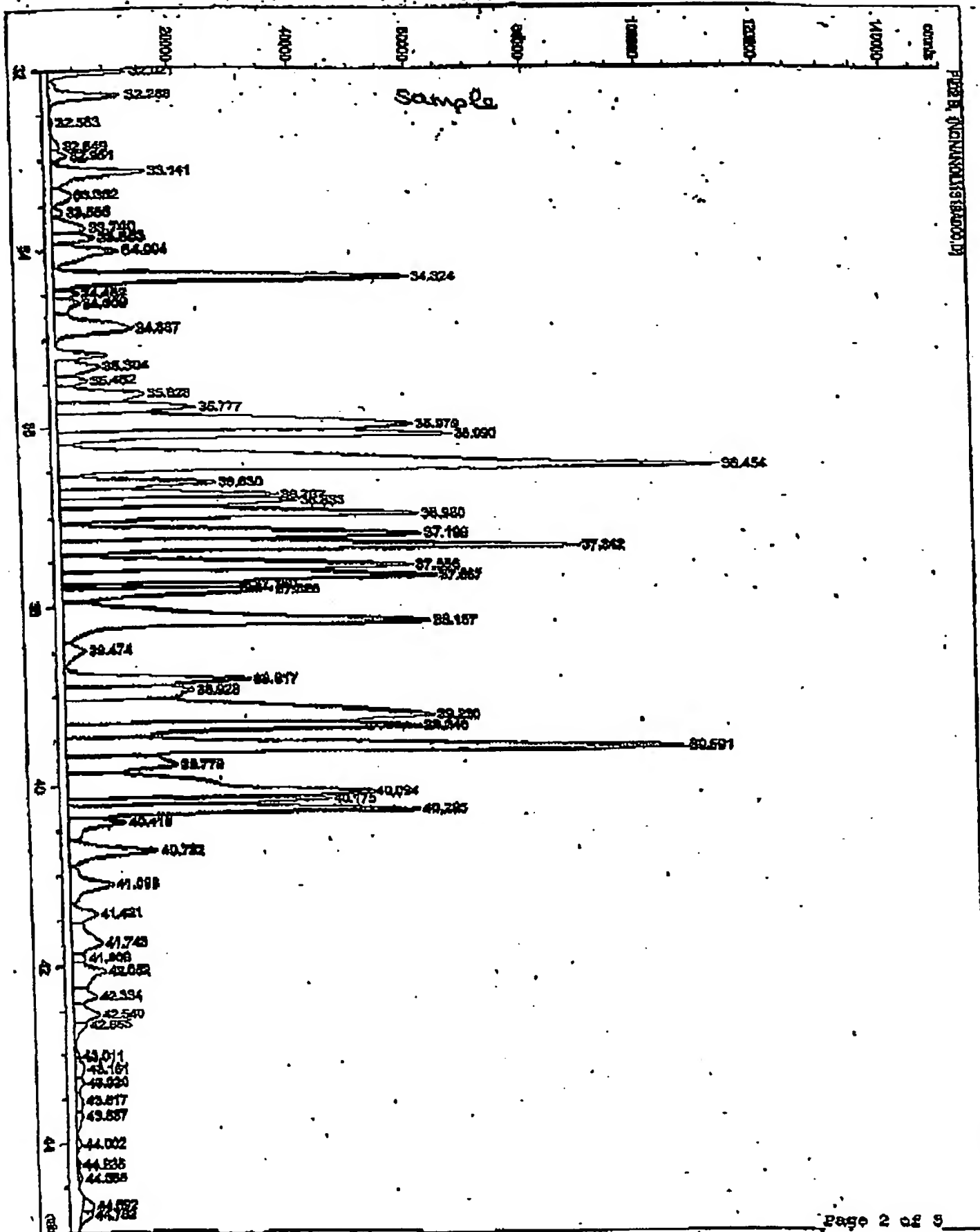
**Detector temperature:** 225°C

**Sample volume injected:** 0.4 µl diluted in methanol (1:10)

**Evaluation:** normalization to 100 area-%

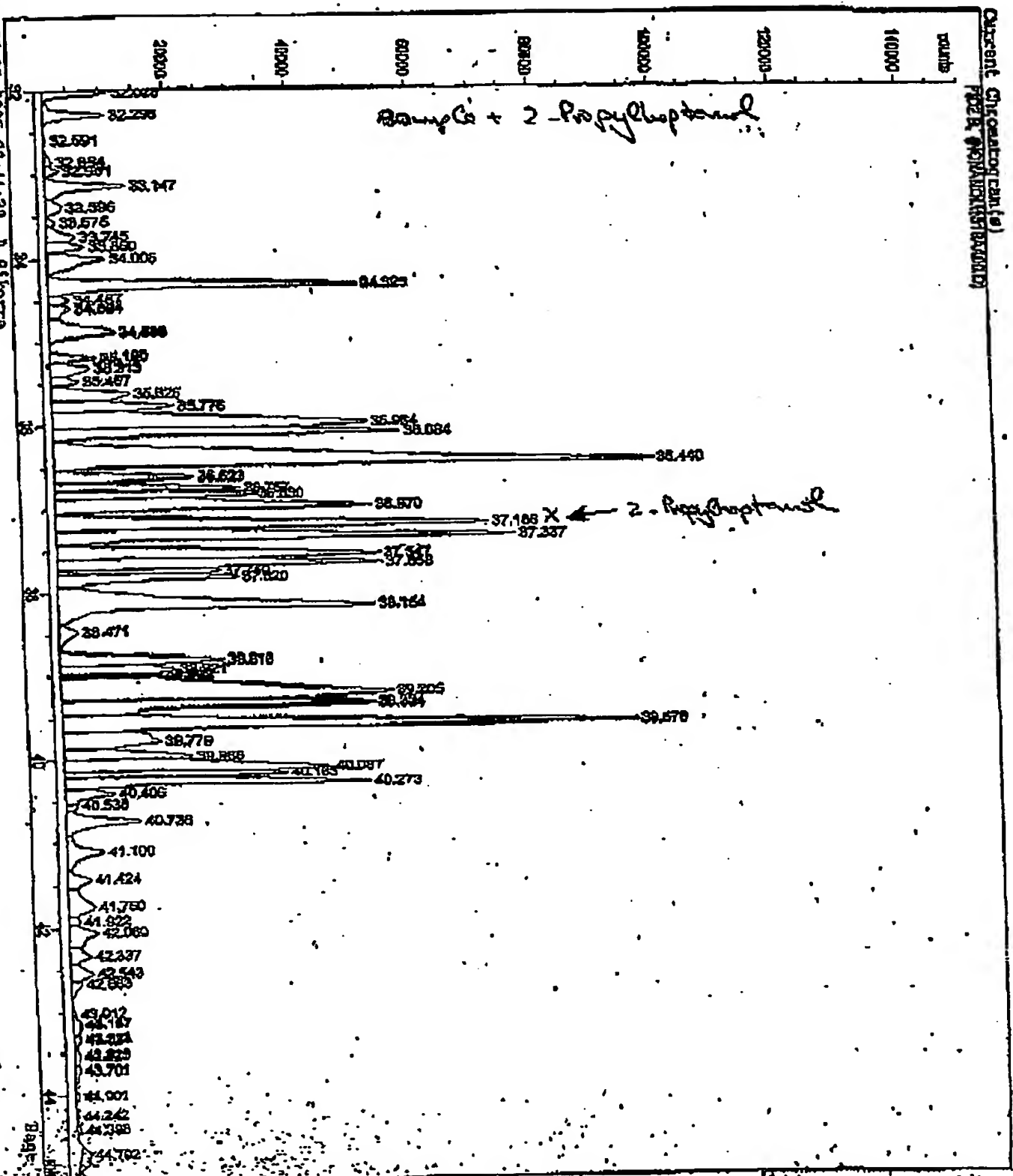


8.



Print of Window 36: Current Chromatogram(s)

P 06 0813 21.11.2005 08:44:32 A. B. K. O. I. E. S.





**From August 2005 to August 2006**

Isodecanol ( $C_{10}H_{22}O$ )

CAS Number: 83821-11-8  
EINECS Number: 2986966

Property	Units	Min	Max	Typical values	Test method
Purity	wt% total alcohols	99.0		99.6	ROF 103/04
Carbonyl number	mgKOH/g		0.20	0.10	ISO 1843-3/77
Acid value	mgKOH/g		0.05	0.03	ASTM D-1045/95*
Distillation - Initial - Dry point	°C	216	226	218 224	ASTM D-1078/03*
Colour	Pt-Co		10	6	ASTM D-1202/00
Density at 20°C	g/cm³	0.836	0.840	0.838	ASTM D-4052/99
Water content	wt%		0.10	0.03	ASTM E-1064/04a

\* Modified. Value may be determined by ExxonMobil procedures equivalent to industry standard test methods. Applicable sampling and testing methods are subject to change without notice and are available for review on request.

10. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

11. Further deponent saith not.

Signature *M. Fay*  
Date December 8<sup>th</sup>, 2005

Customer Number

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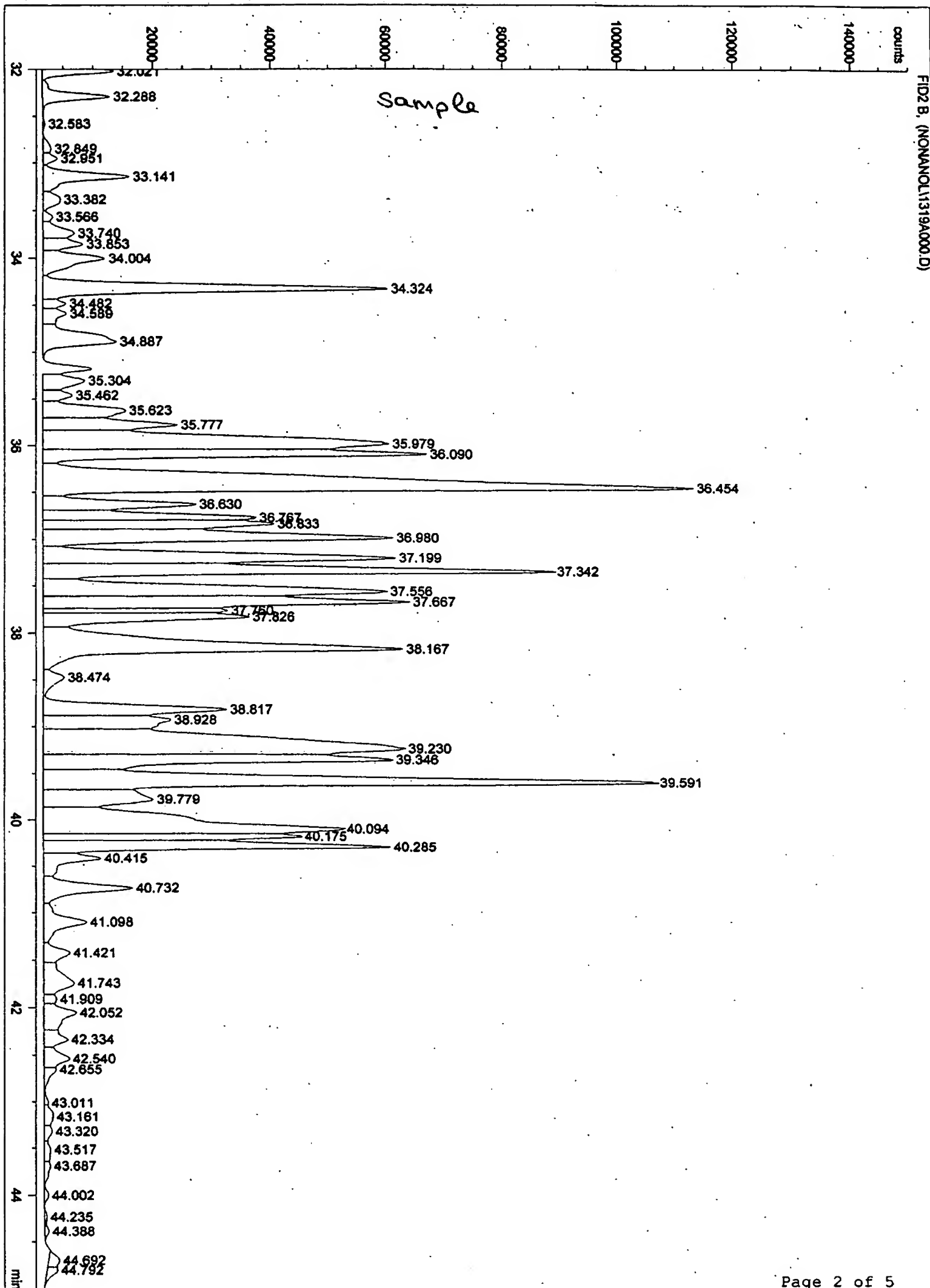
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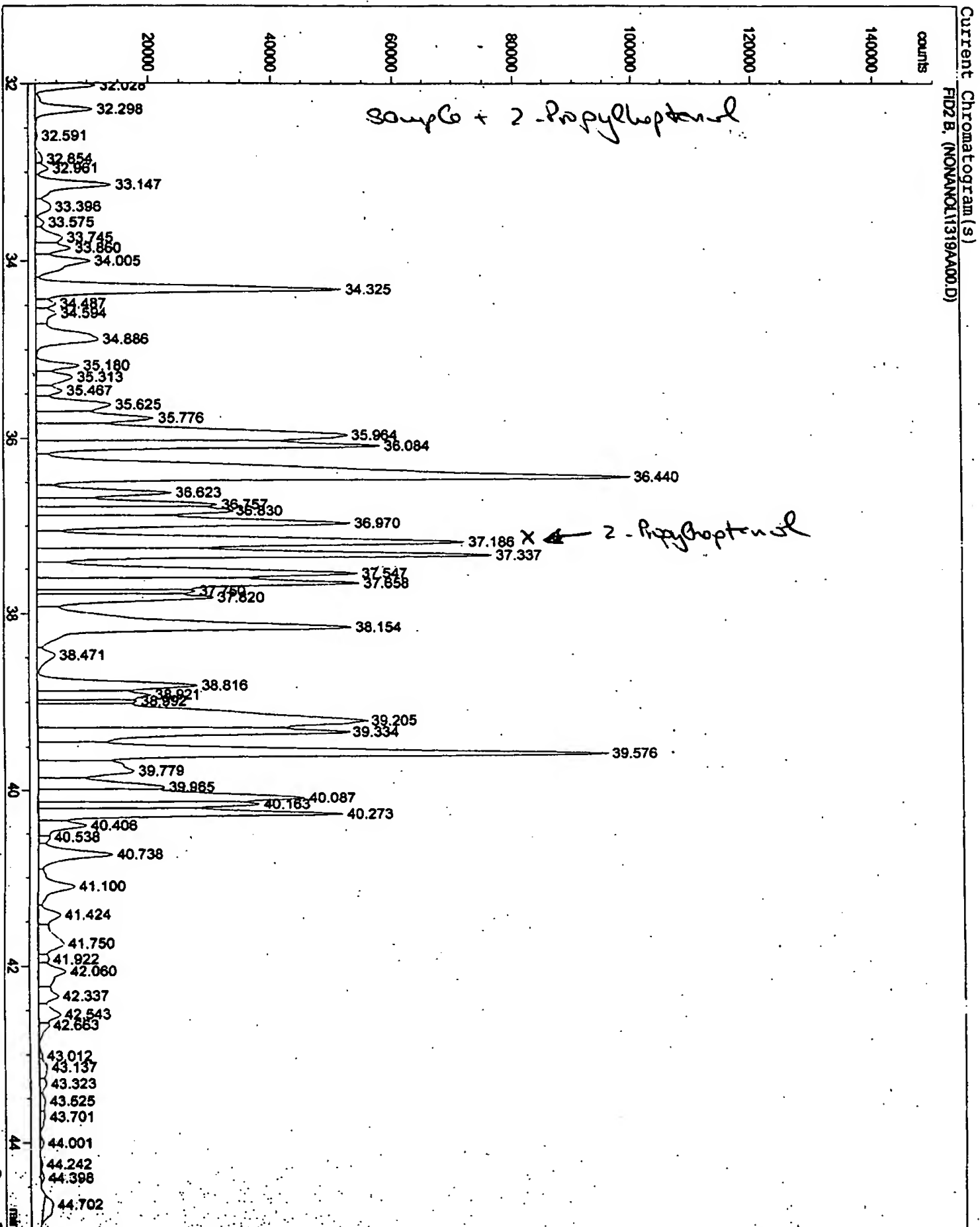
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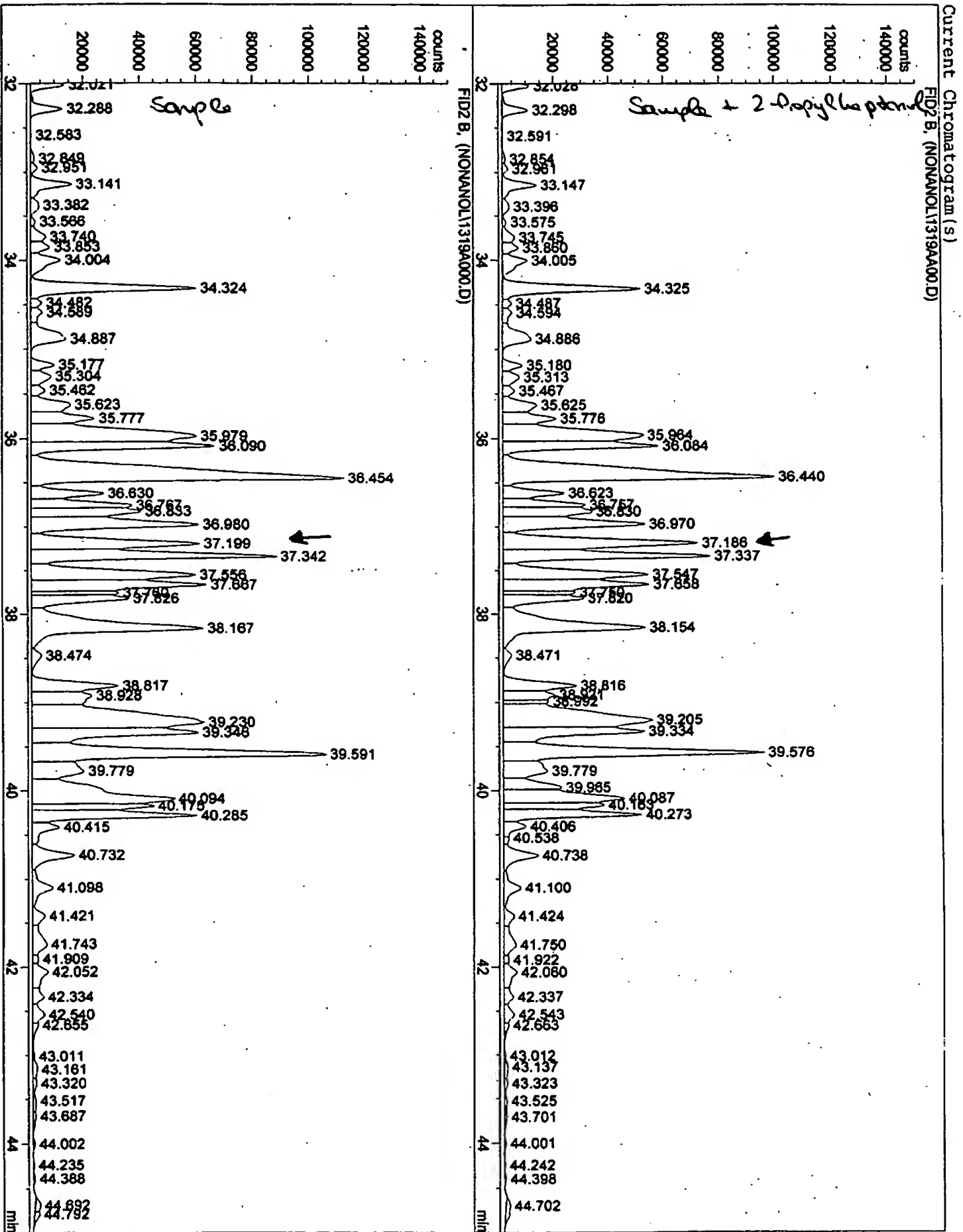
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